



# EM Engineering & Technology: Reducing Technical Risks and Uncertainties in EM Projects

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Office of Engineering & Technology

High-Level Waste Tank Integrity Workshop

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# Engineering and Technology Program

- Mission: To Identify Vulnerabilities and to Reduce the Technical Risk and Uncertainty of EM Programs and Projects
- Vision: Engineering and Technology initiatives will provide the engineering foundation, technical assistance, new approaches, and new technologies that contribute to significant reductions in risk (technology, environmental, safety, and health), cost, and schedule for completion of the EM mission.



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# Strategic Planning for Engineering and Technology Program Activities

- Strategic Planning Approach
  - Implement Roadmap Initiatives
  - Select critical, high-risk, high-payoff projects
  - Complete Technology Readiness Assessments
  - Complete External Technical Reviews
  - Review Risk Management Plans
  - **Conduct Technical Workshops and Exchanges**
- Collaboration with National Laboratories, **Private Sector**, and Universities for innovative technologies and technical exchanges
- Work with Federal Project Directors



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# Roadmap Issued March 2008

- Identifies technology risks in Waste Processing, Groundwater and Soil Remediation, and Deactivation & Decommissioning/Facility Engineering.
- Establishes strategic initiatives to address technical risks and identifies expected outcomes when implemented.
- Is a “living document”.
- Available at <http://www.em.doe.gov/Pages/EngTech.aspx>



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# Roadmap Implementation

- Multiyear Program Plan (MYPP) issued March 2008 developed to implement Roadmap; breaks down work, consistent with the Roadmap, into 5 Strategic Initiatives:
  - **Improved Waste Storage Technology**
  - **Reliable and Efficient Waste Retrieval**
  - Enhanced Tank Closure Processes
  - Next Generation Pre-Treatment Solutions
  - Enhanced Stabilization Technologies
- Staff from national laboratories and site offices across the DOE complex involved in formulating the E&T MYPP
- MYPP addresses:
  - prioritized work activities, required budget, schedule for FY2008-10
  - major products/deliverables, performance metrics, and performer selection
- Available at <http://www.em.doe.gov/Pages/EngTech.aspx>



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# Sharing Technical Expertise and Lessons Learned to Reduce Risk and Technical Uncertainties

- **Technology Exchange and Workshops have assured maximum benefits from outcomes of R&D performed across the DOE complex**
- **Focused workshops**
  - Cementitious Workshop December 2006
  - Aluminum/Chromium Workshop January 2007
  - Technical exchanges among Savannah River, Idaho and Hanford on waste processing projects held in March and October 2007
  - In-situ Decommissioning Workshop September 2007
  - Pilot Plant Lessons Learned Workshop December 2007
  - Slurry Mixing and Pipeline Plugging Workshop January 2008
- **Proceedings posted on EM-20 website**



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# Value of Technical Workshops

- **Opportunity for education, training and learning from the best minds available**
- **Reduces Technical Uncertainty**
  - Defines current state of technology and identifies gaps
  - Maximizes development of constructive alternative strategies
- **Captures participants lessons learned experience**
  - What is working best
  - What is not working and why
- **Helps to integrate DOE approaches complex-wide**
  - Diminishes duplication of effort
  - Promotes consistency in approach to problem solving
- **Communication among our technical leadership**



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# Conclusions

- Roadmap identifies strategies to reduce risks and improve technologies and processes at EM sites.
- Output from technical exchanges and workshops are useful in supporting risk reduction and technical uncertainties
- Broader collaboration through technical exchanges are needed to ensure mission success



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